

1 WEIGHTED INFUSION BEVERAGE PACKAGE
23
4 BACKGROUND OF THE INVENTION
56 1. Field of the Invention
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8 This invention relates broadly to beverage packages.
9 More particularly, this invention relates to infusion
10 beverage packages for tea and coffee and the like.

11
12 2. State of the Art
13

14 Instant beverages including tea and coffee have
15 become very popular throughout the world. The preparation
16 of these beverages is obtained by the infusion of the
17 dried, powdered, granulated, or shredded tea leaves in a
18 soluble base, typically water. Therefore, it is common to
19 prepare tea by immersion of a porous bag filled with tea
20 into a cup of hot water. The same principle is applicable
21 to other packaged beverages, e.g., bags containing coffee,
22 broth, medicament preparations, etc.

23
24 However, when the porous bag is immersed in water, it
25 has a tendency to rise up in the cup due to captured air

1 bubbles and the light density of the materials in the bag.
2 When the porous bag floats to the top of the cup, the rate
3 of steeping of the materials into the cup is reduced.
4 Thus, it is commonplace for users to use a spoon to keep
5 the porous bag totally immersed in the water. This
6 repetitive task is annoying to many users.

7
8 It is also known to attach the porous bag to a
9 weighted member that keeps the porous bag totally immersed
10 in the water. U.S. Patent 3,257,212 describes a stick with
11 a plastic pouch that surrounds the stick. A metal weight
12 is integrally attached to the bottom of the stick or the
13 plastic pouch. The porous bag (referred to as an
14 "envelope") is attached to the plastic pouch. This
15 solution is cumbersome and expensive to implement because
16 the weighted member is far bigger than the porous bag to
17 which it is attached.

18 19 SUMMARY OF THE INVENTION

20
21 It is therefore an object of the invention to provide
22 a package for infusion beverages that remains totally
23 immersed in water and resists any tendency to float.

24

1 It is another object of the invention to provide a
2 package for infusion beverages that remains totally
3 immersed in water and that provides a low-cost compact
4 design.

5

6 It is also an object of the invention to provide a
7 package for infusion beverages that remains totally
8 immersed in water while providing an increased infusion
9 area.

10

11 It is a further object of the invention to provide a
12 package for infusion beverages that is easy to use and
13 effective in infusing product into the beverage.

14

15 It is an additional object of the invention to provide
16 a package for infusion beverages that remains totally
17 immersed in water while imparting sweetener or other flavor
18 characteristics to the beverage.

19

20 In accord with these objects, which will be discussed
21 in detail below, an infusion beverage package includes a
22 body portion having overlying layers of porous material
23 that are joined to form at least one compartment. The
24 compartment(s) carry infusion beverage product in addition.

1 to a weight that causes the body portion to sink in water.
2 The compartment(s) may also carry an agent (e.g.,
3 sweetener) that imparts flavor characteristics into a
4 solution during steeping of the infusion beverage product.
5 The weight is preferably realized by a non-toxic, insoluble
6 odorless, flavorless microwaveable material (e.g., ceramic
7 material, porcelain material, and naturally-occurring rock
8 material).

9

10 It will be appreciated that with the weight
11 encompassed by the body portion of the infusion package,
12 the body portion sinks and remains totally immersed in the
13 steeping solution, providing more effective steeping of the
14 product held the compartment(s) of the package. Also, the
15 annoying and repetitive task of pushing the bag down with a
16 spoon (or other hand-held element) is avoided, while low-
17 cost compact designs can be realized.

18

19 According to one embodiment of the invention, the body
20 portion of the infusion beverage package is realized as a
21 multi-compartment single bag design.

22

23 According to another embodiment of the invention, the
24 infusion beverage package is realized as a dual-bag design.

1

2 According to yet another embodiment of the invention,
3 the infusion beverage package is realized as a flow-thru
4 dual-bag design.

5

6 Additional objects and advantages of the invention
7 will become apparent to those skilled in the art upon
8 reference to the detailed description taken in conjunction
9 with the provided figures.

10

11

BRIEF DESCRIPTION OF THE DRAWINGS

12

13 Fig. 1A is a perspective view of a weighted infusion
14 beverage package in accordance with the present invention;

15

16 Fig. 1B is a cross-sectional view through the weighted
17 infusion beverage package of Fig. 1A;

18

19 Fig. 2 is a perspective view of a dual-bag infusion
20 beverage package in accordance with the present invention;

21

22 Fig. 3 is a perspective view of an alternate dual-bag
23 infusion beverage package in accordance with the present
24 invention.

1
2 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS
3

4 Turning now to Figs. 1A and 1B, there is shown an
5 infusion beverage package 10 in accordance with the present
6 invention. The infusion beverage package 10 has a body
7 portion 11 in the form of a rectangularly shaped bag made of
8 suitable filter sheet material. Overlying layers 12A, 12B
9 of the filter sheet material form the sidewalls of the body
10 portion 11 as best shown in Fig. 1B. The marginal area 14
11 of the overlying layers 12A, 12B along with two transverse
12 sections 16A, 16B of the overlying layers 12A, 12B are
13 joined together, preferably by thermal welding techniques,
14 compression techniques, folding techniques, stitching
15 techniques or in any other suitable manner, to form at
16 least two, and preferably three distinct compartments 18,
17 20, 22. Details of exemplary techniques for joining
18 together the overlying layers 12A, 12B are set forth in
19 U.S. Patent Application Publication US 2003/0113411 to Rose
20 et al., incorporated by reference herein in its entirety.

21
22 The first compartment 18 (or portion thereof) is
23 partially filled with tea 24 (or coffee) before its edges
24 are joined together. Similarly, a weight 26 is disposed in

1 the second compartment 20 (or portion thereof) before its
2 edges are joined, and optionally sweetener product 28 is
3 disposed in an optional third compartment 22 (or portion
4 thereof) before its edges are joined together.

5

6 The filter sheet material may be made of fibrous
7 cellulosic material or other material that has sufficient
8 wet strength to withstand immersion into boiling water
9 without damage or disintegration. Moreover, such filter
10 sheet material is sufficiently porous to allow passage
11 therethrough of water for steeping the tea (or coffee) held
12 in the first compartment. Such filter material is non-
13 toxic in addition to being odorless and flavorless such
14 that it does impart odor or taste to the brewed tea (or
15 coffee).

16

17 The weight 26 is formed from a non-toxic, insoluble
18 odorless and flavorless material which is relatively more
19 dense than water such that the infusion package 10 sinks
20 when placed in water during steeping. Moreover, it is
21 preferable that the weight 26 be microwave-compatible such
22 that the package 10 can be placed into a cold cup of water
23 that is heated by microwave radiation in a microwave oven
24 without significant degradation. For example, ceramic or

1 porcelain material or naturally occurring rock material
2 (such as lava rock) may be used to form the microwave-
3 compatible weight.

4
5 The sweetener product 28 carried by the third
6 compartment 22 is dissolved and infused into the beverage
7 during steeping. In the preferred embodiment of the
8 present invention, the sweetener product 28 contains a
9 predetermined amount (for example, a teaspoon or $\frac{1}{2}$
10 teaspoon) of sugar. Alternatively, the sweetener product
11 28 may be a sugar substitute (such as Nutrasweet®, Sweet'N
12 Low®, etc.), honey or other preferred sweetener. The third
13 compartment 22 can also be used to carry agents that
14 provide other flavor characteristics (such as a cream or
15 lemon flavor) to the infused beverage.

16
17 In order to facilitate handling of the body portion 11
18 during (and after) steeping, a string 30 is anchored to the
19 body portion 11 by a staple or stitch, the thermal welding,
20 or other suitable means (not shown). Preferably, the
21 string 30 is anchored to the body portion 11 near the top
22 of the body portion while the weight is disposed near the
23 bottom of the body portion 11 as shown in Fig. 1A. A tag
24 32 is affixed to the end of the string 30 opposite the body

1 portion. The tag 32 may bear a legend, such as the name
2 (or trademark) of the manufacturer, product name, or other
3 product indicia.

4
5 After manufacturing the infusion package 10 as
6 described above, the infusion package 10 may be used to
7 brew a cup of tea (or coffee) by holding the tag 32 with
8 the body portion 11 suspended by the string 30 and
9 immersing the entire body portion into a cup of boiling
10 water. Such boiling water may be provided by microwave
11 heating of the water-filled cup in a microwave oven with
12 the package 10 immersed in the water-filled cup.

13
14 Advantageously, the weight 26 contained in the second
15 compartment 20 makes the body portion 11 sink and remain
16 totally immersed in the boiling water, providing more
17 effective steeping of the tea (or coffee) held in the first
18 compartment 18. More specifically, because the body
19 portion 11 remains totally immersed in the boiling water,
20 the rate at which the tea (or coffee) steeps into the
21 boiling water is maximized. Also, the annoying and
22 repetitive task of pushing the bag down with a spoon (or
23 other hand-held element) is avoided.

24

1 In an alternate embodiment, the weight 26 may be
2 formed from a dissolvable sweetener having a density
3 greater than water. The sweetener is sufficiently dense
4 such that it acts like a weight when the package 10 is
5 immersed in the cup of water. The sweetener weight may
6 dissolve but not before the tea itself has become
7 sufficiently wet to stay immersed for effective steeping.
8 The sweetener may be a sugar or sugar substitute, and can
9 also incorporate flavoring agents as described above. In
10 yet another embodiment, the dissolvable sweetener weight
11 can be realized with some other dissolvable agent (for
12 example, an agent that imparts a cream flavor). In these
13 alternate embodiments, the weight 26 is microwave-
14 compatible.

15

16 Fig. 2 shows an alternate dual-bag design with two
17 body portions 11a and 11b that extend from a hinged
18 interface 34. Each of the two body portions include at
19 least two (for the tea or coffee and the weight) and
20 preferably all three compartments as described above with
21 respect to the single-bag design of Figs. 1A and 1B.

22

23 Fig. 3 shows yet another dual-bag design. In this
24 embodiment, two body portions 11a' and 11b' extend from a

1 hinged interface 34'. The body portions 11a' and 11b' each
2 include a compartment 18' that carries tea (or coffee).
3 The body portions 11a' and 11b' are joined together by a
4 bottom wall 36, which includes a compartment 20' that holds
5 a weight 28' for the package 10''. Extensions of the
6 bottom wall 36 (or extensions of the side walls of body
7 portions 11a' and 11b) include compartments 22' that hold
8 the sweetener product 28 for the package 10''. The area
9 between the body portions 11a' and 11b' and the bottom wall
10 26 provide a space for water to flow through the package
11 10'' during steeping and thus provides an increased
12 infusion area. The bottom wall 36 (and possibly the weight
13 28') may be hinged to permit folding. Such folding
14 provides for encapsulation of the package 10'' in a small
15 paper pouch or individual plastic bag.

16
17 It is to be understood that this invention is not only
18 applicable to infusion packages for brewing tea (or
19 coffee), but is also adaptable for use with other products
20 encased in a porous sheet material that is immersed into a
21 hot liquid, such as soups, powdered milk, medicinal
22 preparations, food seasonings, dyes and the like.

23

1 There have been described and illustrated herein
2 several embodiments of a weighted infusion beverage
3 package. While particular embodiments of the invention
4 have been described, it is not intended that the invention
5 be limited thereto, as it is intended that the invention be
6 as broad in scope as the art will allow and that the
7 specification be read likewise. Thus, while particular
8 shapes and configurations have been disclosed, it will be
9 appreciated that other shapes and configurations can be
10 used as well. For example, and not by way of limitation,
11 it is contemplated that the compartment(s) carrying
12 sweetener (or other flavoring agents) may be omitted from
13 the package (or possibly detachable by tearing along a
14 perforated seam disposed between the second and third
15 compartments). Such configurations would allow the user
16 infuse the beverage without sweetener (or with other
17 sweeteners or flavoring agents so desired by the user).
18 Moreover, it is contemplated that the weight and sweetener
19 product may be carried in the same compartment in the
20 porous filter material. It is also contemplated that the
21 weight and/or sweetener product may be carried along with
22 the infusion product (tea or coffee or other infusion
23 material) in the same compartment in the porous filter
24 material. In yet another configuration, the compartment in

1 the porous filter material that carries the weight may have
2 an opening that allows the user to insert and remove the
3 weight from within the compartment. This feature would
4 allow the weight to be reused over multiple infusion
5 beverage packages if desired. Moreover, while particular
6 configurations have been disclosed in reference to the
7 materials and manufacture of such packages, it will be
8 appreciated that other materials and configurations could
9 be used as well. It will therefore be appreciated by those
10 skilled in the art that yet other modifications could be
11 made to the provided invention without deviating from its
12 spirit and scope as claimed.

13